

EXHIBIT 1

**Redacted Version of
Document Sought to
be Sealed**

CONFIDENTIAL - ATTORNEYS' EYES ONLY

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

---o0o---

PATRICK CALHOUN, et al.,)
on behalf of themselves and)
all others similarly)
situated,)

Plaintiffs,

) Case No.

) 5:20-cv-5146-LHK-SVK

vs.)

GOOGLE LLC,)

Defendant.)

CHASOM BROWN, et al.,)
on behalf of themselves and)
all others similarly)
situated,)

Plaintiffs,

) Case No.

) 5:20-cv-03664-LHK

vs.)

GOOGLE LLC,)

Defendant.)

---o0o---

Videotaped Zoom Deposition of
HUEI-HUNG (CHRIS) LIAO
CONFIDENTIAL, ATTORNEYS' EYES ONLY
Friday, December 3, 2021

---o0o---

Katy E. Schmidt
RPR, RMR, CRR, CSR 13096
Veritext Job No.: 4962198

CONFIDENTIAL - ATTORNEYS' EYES ONLY

<p>1 IN THE UNITED STATES DISTRICT COURT 2 FOR THE NORTHERN DISTRICT OF CALIFORNIA 3 SAN JOSE DIVISION 4 ---o0o---</p> <p>5 PATRICK CALHOUN, et al ,) on behalf of themselves and) 6 all others similarly) situated,) 7) Plaintiffs,)Case No 8)5:20-cv-5146-LHK-SVK vs) 9) GOOGLE LLC,) 10) Defendant) 11) CHASOM BROWN, et al ,) 12 on behalf of themselves and) all others similarly) 13 situated,) 14) Plaintiffs,)Case No 15)5:20-cv-03664-LHK vs) 16) GOOGLE LLC,) 17) Defendant) 18) BE IT REMEMBERED that, pursuant to Notice, and 19 on Friday, the 3rd day of December, 2021, commencing at the hour of 9 05 a m , thereof, in Sunnyvale, 20 California, before me, KATY E SCHMIDT, a Certified Shorthand Reporter in and for the County of Yolo, State 21 of California, there virtually personally appeared 22 HUEI-HUNG (CHRIS) LIAO 23 called as a witness herein, who, being by me first duly sworn, was thereupon examined and interrogated as 24 hereinafter set forth 25</p> <p style="text-align: right;">Page 2</p>	<p>1 APPEARANCES CONTINUED: 2 Also present: 3 David West, Videographer 4 Ryan McGee, In-house counsel 5 Toni Baker, In-house counsel 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p style="text-align: center;">---o0o---</p> <p style="text-align: right;">Page 4</p>
<p>1 APPEARANCES: 2 For The Plaintiffs: 3 (Appeared via Zoom) 4 BLEICHMAR FONTI & AULD LLP BY: LESLEY WEAVER, Esq 5 555 12th Street, Suite 1600 Oakland, California 994607 6 415 445 4003 lweaver@bfaalaw com 7 (Appeared via Zoom) 8 SIMMONS HANLY CONROY 9 BY: JASON "JAY" BARNES, Esq BY: AN TRUONG, Esq 10 One Court Street Alton, Illinois 62002 11 618 693 3104 jaybarnes@simmonsfirm com 12 (Appeared via Zoom) 13 BOIES SCHILLER FLEXNER LLP 14 BY: MARK MAO, Esq BY: BEKO RICHARDSON, Esq 15 BY: ERIKA NYBORG-BURCH, Esq 44 Montgomery Street, 41st Floor 16 San Francisco, California 94104 415 293 6800 17 mmao@bsflp com 18 For The Defendants: 19 (Appeared via Zoom) 20 Quinn Emanuel Urquhart & Sullivan LLP BY: JOSEF ANSORGE, Esq 21 BY: TRACY GAO, Esq 51 Madison Avenue, 22nd Floor 22 New York, New York 10010 212 849 7000 23 josefansorge@quinnemanuel com 24 /// 25 ///</p> <p style="text-align: right;">Page 3</p>	<p>1 INDEX OF EXAMINATION 2 ---o0o--- 3 Page 4 Examination by Mr. Mao 09 5 Examination by Mr. Ansortge 197 6 ---o0o--- 7 8 QUESTIONS INSTRUCTED NOT TO ANSWER 9 10 Page Line 11 12 (NOTHING OFFERED.) 13 ---o0o--- 14 15 16 17 18 19 20 21 22 23 24 25</p> <p style="text-align: right;">Page 5</p>

CONFIDENTIAL - ATTORNEYS' EYES ONLY

<p>1 you look at [REDACTED] in the center, it looks like it 09:25</p> <p>2 interacts or serves [REDACTED], [REDACTED], and [REDACTED]. 09:25</p> <p>3 Is that correct? That's on the middlish top 09:25</p> <p>4 left. 09:25</p> <p>5 A. Yes. 09:25</p> <p>6 Q. And my question was it looks like the primary 09:25</p> <p>7 storage mechanisms by which they are pulling, okay, in 09:25</p> <p>8 order to do whether it be a lookup or I think you call 09:25</p> <p>9 it propagating or whatever it's doing, it's pulling 09:25</p> <p>10 primarily from [REDACTED] and [REDACTED]. 09:25</p> <p>11 Is that correct? 09:25</p> <p>12 A. [REDACTED] does serve [REDACTED] and [REDACTED] and 09:26</p> <p>13 [REDACTED], and I believe during the serving of 09:26</p> <p>14 these clients, it may be unnecessary at times for [REDACTED] to 09:26</p> <p>15 consult storage back ends, including [REDACTED] and/or [REDACTED] 09:26</p> <p>16 and maybe some other times [REDACTED]. 09:26</p> <p>17 Q. Are there times when [REDACTED], [REDACTED], 09:26</p> <p>18 [REDACTED] need to use [REDACTED], and [REDACTED] does not need 09:26</p> <p>19 to look up a storage mechanism? 09:26</p> <p>20 MR. ANSORGE: Objection. Compound. 09:26</p> <p>21 MR. MAO: Really, Joey, I highly doubt that 09:26</p> <p>22 was a compound question. 09:26</p> <p>23 But go ahead, Chris. 09:26</p> <p>24 THE WITNESS: As I stated before, [REDACTED] and 09:26</p> <p>25 [REDACTED] and [REDACTED], they are storage systems, either 09:26</p> <p style="text-align: right;">Page 22</p>	<p>1 what particular data is stored in [REDACTED] these days. 09:27</p> <p>2 I believe some production related settings may 09:27</p> <p>3 be stored there, but I'm not up to date on that. 09:28</p> <p>4 In [REDACTED] or [REDACTED], some user settings will be 09:28</p> <p>5 stored in the storage systems, and [REDACTED] may use a user ID 09:28</p> <p>6 to look up the relevant user settings from [REDACTED] or [REDACTED]. 09:28</p> <p>7 Q. Does [REDACTED] store any of the pairings for 09:28</p> <p>8 PP IDs to Biscotti IDs? 09:28</p> <p>9 MR. ANSORGE: Objection. Vague. 09:28</p> <p>10 THE WITNESS: Not to my knowledge. 09:28</p> <p>11 BY MR. MAO: 09:28</p> <p>12 Q. Are linkings between PP IDs and Biscottis -- 09:28</p> <p>13 Biscottis IDs stored in [REDACTED] instead? 09:28</p> <p>14 A. Can you clarify by what you mean by linking 09:28</p> <p>15 and Biscottis ID in this case? 09:28</p> <p>16 Q. Sure. Sure. 09:28</p> <p>17 So my understanding is that publisher provided 09:28</p> <p>18 IDs are linked to Biscottis IDs at some part of the 09:29</p> <p>19 storage mechanism on the back end for Google Ads and 09:29</p> <p>20 Analytics. 09:29</p> <p>21 Is that correct? 09:29</p> <p>22 MR. ANSORGE: Objection. Form. 09:29</p> <p>23 THE WITNESS: As I stated yesterday, PPID is a 09:29</p> <p>24 form of ID and AdManager Publisher can choose to supply 09:29</p> <p>25 Google with. 09:29</p> <p style="text-align: right;">Page 24</p>
<p>1 maintaining a role-based lookup mechanism or a [REDACTED] 09:26</p> <p>2 pair. 09:27</p> <p>3 And in the absence of a key, [REDACTED] wouldn't be 09:27</p> <p>4 contacting the storage back ends. 09:27</p> <p>5 BY MR. MAO: 09:27</p> <p>6 Q. I see. 09:27</p> <p>7 So what you mean is that if there is 09:27</p> <p>8 nothing -- if there is no way for it to do a lookup 09:27</p> <p>9 because there is nothing to look up, [REDACTED] would not be 09:27</p> <p>10 doing anything. 09:27</p> <p>11 Is that correct? 09:27</p> <p>12 A. That is my understanding. 09:27</p> <p>13 Q. Got it. Got it. 09:27</p> <p>14 So what -- so then let me push that a little 09:27</p> <p>15 bit; right? 09:27</p> <p>16 So like when is it that [REDACTED] looks up and 09:27</p> <p>17 requests something from [REDACTED] versus when it 09:27</p> <p>18 starts -- when it asks and looks up something from 09:27</p> <p>19 [REDACTED]? 09:27</p> <p>20 MR. ANSORGE: Objection. Form. 09:27</p> <p>21 MR. MAO: Well, you didn't say compound this 09:27</p> <p>22 time. 09:27</p> <p>23 BY MR. MAO:</p> <p>24 Q. Go ahead, Mr. Liao. 09:27</p> <p>25 A. I am not up to date on my knowledge around 09:27</p> <p style="text-align: right;">Page 23</p>	<p>1 When a publisher does that and I believe when 09:29</p> <p>2 a publisher also enables the use of PPID and a publisher 09:29</p> <p>3 facing front end by the AdManager product, then Google 09:29</p> <p>4 system will ingest -- 09:29</p> <p>5 MR. MAO: Yeah. I took that off. 09:29</p> <p>6 Go ahead. Sorry. 09:29</p> <p>7 THE WITNESS: -- will ingest -- it's okay. 09:29</p> <p>8 -- will ingest the PPID. 09:29</p> <p>9 What then happens is PPID will be internally 09:30</p> <p>10 transformed to a different numerical value. In the 09:30</p> <p>11 process we call it mapping a PPID to a Biscottis ID. 09:30</p> <p>12 This Biscottis ID is called a Biscottis ID 09:30</p> <p>13 because it is drawn from a numerical space known as 09:30</p> <p>14 Biscottis. 09:30</p> <p>15 BY MR. MAO:</p> <p>16 Q. Got it. 09:30</p> <p>17 So if you don't mind looking at that same 09:30</p> <p>18 Exhibit No. 4, okay, if you could go to 353 of that, 09:30</p> <p>19 which if you scroll up, that should be page 40. It 09:30</p> <p>20 should be called [REDACTED] -- 09:30</p> <p>21 A. Four zero. 09:30</p> <p>22 Q. Yes, four zero. "[REDACTED] Overview." 09:30</p> <p>23 A. Okay. I have it. 09:30</p> <p>24 Q. I'm going to be asking you basically questions 09:31</p> <p>25 from page 40 there through 42, which on the bottom it 09:31</p> <p style="text-align: right;">Page 25</p>

CONFIDENTIAL - ATTORNEYS' EYES ONLY

<p>1 would be Bates stamp 53 through 55. 09:31</p> <p>2 A. 40 to 42. 09:31</p> <p>3 Q. Yeah. Should be [REDACTED] Overview. I 09:31</p> <p>4 know it drives Mr. Ansorge crazy, but it's basically 09:31</p> <p>5 this. It's just this. 09:31</p> <p>6 Okay? 09:31</p> <p>7 Just so that you and I know that we're looking 09:31</p> <p>8 at the same thing. 09:31</p> <p>9 A. Would you like me to take a few moments to 09:31</p> <p>10 reread the three slides? 09:31</p> <p>11 Q. Yes, please, sir. 09:31</p> <p>12 A. Yes. 09:32</p> <p>13 Q. Is the explanation on those three slides, 09:32</p> <p>14 which is from 53 through 55, is that consistent with 09:32</p> <p>15 your understanding as to how ID mapping slash linking 09:32</p> <p>16 works in [REDACTED] currently? 09:32</p> <p>17 A. I do not have the most up-to-date knowledge on 09:32</p> <p>18 the different parts of [REDACTED], whether or not 09:32</p> <p>19 they remain active today. But I believe these were 09:32</p> <p>20 conceived of -- these were features for [REDACTED] 09:32</p> <p>21 conceived of at different points in time. 09:32</p> <p>22 Q. Got it. 09:32</p> <p>23 How about at the time of this presentation, 09:32</p> <p>24 are those three slides accurate as of the time of that 09:32</p> <p>25 presentation in 2020? 09:33</p> <p style="text-align: right;">Page 26</p>	<p>1 inaccurate? 09:34</p> <p>2 A. Source ID, MD5 (device ID), Targe ID, Mobile 09:34</p> <p>3 App Biscottis, Project/Design Doc." 09:34</p> <p>4 I think the first row is accurate still. 09:34</p> <p>5 "MD5 (device ID), Unified Webview Biscottis, 09:34</p> <p>6 [REDACTED]," my knowledge on [REDACTED] as a 09:34</p> <p>7 project is not up to date, but my recollection is that 09:34</p> <p>8 not all of this project -- not all features of this 09:34</p> <p>9 project remain active today. Some parts of it have 09:34</p> <p>10 ceased to function at different points in time. That's 09:34</p> <p>11 my recollection. 09:35</p> <p>12 Q. Got it. 09:35</p> <p>13 A. Would you like me to go on? 09:35</p> <p>14 Q. Yes, please, finish. Yeah. 09:35</p> <p>15 A. MD5 (PPID, partner ID)" to Biscottis, this was 09:35</p> <p>16 the PPID injection path that we discussed about five 09:35</p> <p>17 minutes ago. 09:35</p> <p>18 Gaia to [REDACTED], I believe this has since been 09:35</p> <p>19 sunset. I am not certain as to which parts of the 09:35</p> <p>20 [REDACTED] infrastructure remain active today versus which 09:35</p> <p>21 part have been sunset. 09:35</p> <p>22 [REDACTED] to my understanding was never 09:35</p> <p>23 launched. 09:35</p> <p>24 Q. Ah. That's super helpful. 09:35</p> <p>25 So, sorry, I'm actually moving on to -- oh, 09:35</p> <p style="text-align: right;">Page 28</p>
<p>1 MR. ANSORGE: Objection. Form. 09:33</p> <p>2 THE WITNESS: I am not certain. 09:33</p> <p>3 BY MR. MAO: 09:33</p> <p>4 Q. Okay. But let's talk about the slides for a 09:33</p> <p>5 moment here. 09:33</p> <p>6 Slide -- that first slide, which is 53, or on 09:33</p> <p>7 the .pdf, page 40, again [REDACTED] Overview." 09:33</p> <p>8 A. Yes. 09:33</p> <p>9 Q. Is there anything stated on this slide that 09:33</p> <p>10 you disagree with? 09:33</p> <p>11 A. [REDACTED] aims to provide a single view 09:33</p> <p>12 of a user on the same device or across devices. 09:33</p> <p>13 [REDACTED] provides a single graph of 09:33</p> <p>14 Biscotti IDs where a link" -- 09:33</p> <p>15 THE COURT REPORTER: I'm sorry, Mr. Liao. I 09:33</p> <p>16 need you to either speak up so I can hear you clearly or 09:33</p> <p>17 read to yourself. 09:33</p> <p>18 THE WITNESS: Understood. Apologies. 09:33</p> <p>19 They are consistent with my understanding of 09:33</p> <p>20 what [REDACTED] aims to do. 09:33</p> <p>21 BY MR. MAO: 09:33</p> <p>22 Q. Okay. Next slide on -- which is 41, or on the 09:33</p> <p>23 Bates stamp it's 54, [REDACTED] Uses ID Mapping 09:34</p> <p>24 slash Linking." 09:34</p> <p>25 Is there anything here that you think is 09:34</p> <p style="text-align: right;">Page 27</p>	<p>1 no. Okay. I'm wrong. 09:35</p> <p>2 I thought this actually continued on the next 09:35</p> <p>3 slide. That's why I was scrolling down. I thought the 09:35</p> <p>4 gray areas were on the next slide. So I apologize. You 09:35</p> <p>5 had that right. 09:35</p> <p>6 Quick question on [REDACTED]. Was that moved 09:35</p> <p>7 over to [REDACTED], or was just the entire architecture 09:35</p> <p>8 scrapped? 09:36</p> <p>9 A. [REDACTED] is not moved to [REDACTED]. And, 09:36</p> <p>10 again, I'm relying on my memory here because I myself or 09:36</p> <p>11 my team did not develop [REDACTED]. We similarly inherited 09:36</p> <p>12 parts of the [REDACTED] infrastructure from the previous 09:36</p> <p>13 team. 09:36</p> <p>14 My -- to the best of my knowledge, some parts 09:36</p> <p>15 of the [REDACTED] infrastructure have since been sunset. 09:36</p> <p>16 There may be some remaining parts of the infrastructure 09:36</p> <p>17 that remain running to date, but I'm not certain which 09:36</p> <p>18 parts they may be. 09:36</p> <p>19 Q. Got it. Got it. 09:36</p> <p>20 So moving up, which is the "PPID comma 09:36</p> <p>21 Partner ID" row that you and I were just talking about a 09:36</p> <p>22 few minutes ago, on Biscottis, you see there on the 09:36</p> <p>23 right it says the "Project go backslash XFPPPID"? Do 09:36</p> <p>24 you see that there? 09:37</p> <p>25 Does that -- is that referencing an internal 09:37</p> <p style="text-align: right;">Page 29</p>

CONFIDENTIAL - ATTORNEYS' EYES ONLY

<p>1 document or is that referencing like a place where the 09:37</p> <p>2 mapping slash linking is stored? 09:37</p> <p>3 MR. ANSORGE: Objection. Compound. 09:37</p> <p>4 THE WITNESS: I don't know for sure without 09:37</p> <p>5 clicking on that link, but I think it should point to 09:37</p> <p>6 an end document. 09:37</p> <p>7 BY MR. MAO: 09:37</p> <p>8 Q. Got it. 09:37</p> <p>9 Where is this ID mapping slash linking stored 09:37</p> <p>10 between PPIDs and Biscottis? 09:37</p> <p>11 A. We generally refer to it as a mapping because 09:37</p> <p>12 it's basically a transformation and it is stored in 09:37</p> <p>13 [REDACTED]. 09:37</p> <p>14 Q. Do you know what table or part of [REDACTED] that 09:37</p> <p>15 would be in? 09:37</p> <p>16 A. Sorry. I need to correct myself. I'm 09:37</p> <p>17 actually unsure as to if it's stored in [REDACTED] or [REDACTED] 09:37</p> <p>18 today. 09:37</p> <p>19 Q. Ah. I see. 09:38</p> <p>20 What is the difference between the two? 09:38</p> <p>21 A. My understanding is [REDACTED] is a newer version of 09:38</p> <p>22 [REDACTED] with a few differences in resource consumption 09:38</p> <p>23 and access latency and replication to the guarantees and 09:38</p> <p>24 the automaticity of operations. There are some 09:38</p> <p>25 differences in data/read/write and how fast it can 09:38</p> <p style="text-align: right;">Page 30</p>	<p>1 Q. And same question: Do you have any idea 09:39</p> <p>2 whether or not the move from [REDACTED] to [REDACTED] has anything 09:39</p> <p>3 to do with moving from first-party IDs -- sorry -- from 09:40</p> <p>4 third-party IDs to first-party IDs? 09:40</p> <p>5 A. No. 09:40</p> <p>6 Q. For how long was the mapping from PPIDs to 09:40</p> <p>7 Biscottis IDs situated in [REDACTED] as opposed to [REDACTED], to 09:40</p> <p>8 the best of your knowledge? 09:40</p> <p>9 A. Can you clarify if you are -- what time span 09:40</p> <p>10 are you referring to? 09:40</p> <p>11 Q. That is actually my question, Mr. Liao. I'm 09:40</p> <p>12 just trying to understand when you believe that that 09:40</p> <p>13 mapping was actually stored in [REDACTED] as opposed to [REDACTED]. 09:40</p> <p>14 MR. ANSORGE: Mark, if we're not asking 09:40</p> <p>15 questions about the document, would it be possible to 09:40</p> <p>16 pull it down? Are you okay with that? 09:40</p> <p>17 MR. MAO: Yeah. If you stop objecting on the 09:40</p> <p>18 basis of compound to noncompound questions, I'll do 09:40</p> <p>19 that. 09:40</p> <p>20 MR. ANSORGE: Just trying to preserve a 09:40</p> <p>21 record. 09:40</p> <p>22 MR. MAO: Understood. As am I, but I'm the 09:40</p> <p>23 one taking the depo. 09:41</p> <p>24 BY MR. MAO:</p> <p>25 Q. So go ahead, Mr. Liao. 09:41</p> <p style="text-align: right;">Page 32</p>
<p>1 propagate through different metros and regions. 09:38</p> <p>2 Q. What would be the reason why you would need to 09:38</p> <p>3 move that mapping -- that mapping table from [REDACTED] to 09:38</p> <p>4 [REDACTED]? 09:38</p> <p>5 MR. ANSORGE: Objection. Form. 09:38</p> <p>6 THE WITNESS: I'm not the primary owner of 09:38</p> <p>7 the project but based on my understanding, one of the 09:39</p> <p>8 motivating factors is to reduce the amount of resource 09:39</p> <p>9 consumption. 09:39</p> <p>10 BY MR. MAO: 09:39</p> <p>11 Q. Does [REDACTED] -- is [REDACTED] also able to respond to 09:39</p> <p>12 requests faster than [REDACTED]? 09:39</p> <p>13 A. I'm not certain under what circumstances [REDACTED] 09:39</p> <p>14 may offer superior performance to [REDACTED]. I believe 09:39</p> <p>15 there were technical tradeoffs that were analyzed. 09:39</p> <p>16 Q. I see. 09:39</p> <p>17 Were one of the tradeoffs that you would be 09:39</p> <p>18 able to retrieve PPID mapped Biscottis IDs faster on 09:39</p> <p>19 [REDACTED] than on [REDACTED]? 09:39</p> <p>20 A. I do not know for sure. 09:39</p> <p>21 Q. Do you know whether or not it has -- the move 09:39</p> <p>22 from [REDACTED] to [REDACTED] has anything to do with a greater 09:39</p> <p>23 reliance on first-party cookies as opposed to 09:39</p> <p>24 third-party cookies? 09:39</p> <p>25 A. No. 09:39</p> <p style="text-align: right;">Page 31</p>	<p>1 A. Yeah. So if I recall your question, you asked 09:41</p> <p>2 about under what circumstances will data be stored in 09:41</p> <p>3 [REDACTED] versus [REDACTED]? Was that the question? 09:41</p> <p>4 Q. Oh, no, no. 09:41</p> <p>5 I'm just trying to understand when that table 09:41</p> <p>6 of -- either you called it a linkage or the mapping from 09:41</p> <p>7 PPIDs to Biscottis IDs was actually stored in [REDACTED]. 09:41</p> <p>8 I'm just trying to know like during what periods. 09:41</p> <p>9 A. Did you mean when such a record would be first 09:41</p> <p>10 written to the storage system? 09:41</p> <p>11 Q. Well, so -- it's actually a much simpler 09:41</p> <p>12 question than it sounds. 09:41</p> <p>13 It sounds like you're saying you're not sure 09:41</p> <p>14 if it currently still sits in [REDACTED] because it sounds 09:41</p> <p>15 like there are plans to move that -- to move that table 09:41</p> <p>16 from [REDACTED] to [REDACTED], or it may have already happened. 09:41</p> <p>17 Is that correct? 09:42</p> <p>18 A. I see. 09:42</p> <p>19 I am generally aware of an effort to migrate 09:42</p> <p>20 some of the [REDACTED] use cases over to using [REDACTED]. My 09:42</p> <p>21 testimony was in reference to that effort. 09:42</p> <p>22 And I am uncertain as to whether or not this 09:42</p> <p>23 particular use case has been or will be migrated from 09:42</p> <p>24 [REDACTED] to [REDACTED]. 09:42</p> <p>25 Q. So where is that table currently sitting? Is 09:42</p> <p style="text-align: right;">Page 33</p>

CONFIDENTIAL - ATTORNEYS' EYES ONLY

<p>1 it currently sitting in [REDACTED] or [REDACTED]? 09:42</p> <p>2 I think that's the part where I need to 09:42</p> <p>3 clarify. I don't understand. 09:42</p> <p>4 A. That, I do not know for sure. Yeah. 09:42</p> <p>5 Q. Do you know when the last time you believe 09:42</p> <p>6 that it would have been sitting in [REDACTED]? 09:42</p> <p>7 MR. ANSORGE: Objection. Form. 09:42</p> <p>8 THE WITNESS: In the past, when I worked with 09:42</p> <p>9 related code, this table sat in [REDACTED]. But as I stated 09:42</p> <p>10 earlier, I'm also aware of a general effort to migrate 09:42</p> <p>11 some [REDACTED] use cases to [REDACTED]. So this table may or may 09:43</p> <p>12 not be moved to [REDACTED] already. 09:43</p> <p>13 BY MR. MAO:</p> <p>14 Q. Got it. 09:43</p> <p>15 And when it was sitting in [REDACTED], was there 09:43</p> <p>16 any tools that you would have been able to use to search 09:43</p> <p>17 that table? 09:43</p> <p>18 A. I am aware of a tool, but I have not used it 09:43</p> <p>19 personally myself. 09:43</p> <p>20 Q. What is the name of that tool? 09:43</p> <p>21 A. I believe -- I may be wrong because I'm 09:43</p> <p>22 relying on memory. I believe it's called [REDACTED] 09:43</p> <p>23 or [REDACTED] or something like that. 09:43</p> <p>24 Q. And would it be searching a table or -- like, 09:44</p> <p>25 what would it be -- what would that tool be searching in 09:44</p> <p style="text-align: right;">Page 34</p>	<p>1 In terms of that table for PPIDs with 09:45</p> <p>2 Biscottis IDs in [REDACTED] or [REDACTED], is there anything 09:45</p> <p>3 different about that table than other similarly stored 09:45</p> <p>4 tables in [REDACTED] or [REDACTED]? 09:45</p> <p>5 MR. ANSORGE: Objection. Form. 09:45</p> <p>6 BY MR. MAO: 09:45</p> <p>7 Q. Let me clarify and explain a little bit. 09:45</p> <p>8 I'm just trying to understand, is one able to 09:45</p> <p>9 search that table just like they were able to search any 09:45</p> <p>10 other table within [REDACTED] and [REDACTED] using the same tools? 09:45</p> <p>11 That's my question. 09:45</p> <p>12 A. As I stated earlier, I don't recall using that 09:45</p> <p>13 tool myself, so I am not able to answer that question. 09:45</p> <p>14 Q. Got it. 09:45</p> <p>15 Would you be able to write a script in order 09:45</p> <p>16 to search that table? 09:45</p> <p>17 MR. ANSORGE: Objection. Vague. 09:45</p> <p>18 THE WITNESS: I have not done so myself and I 09:45</p> <p>19 wouldn't know how to do it. 09:45</p> <p>20 BY MR. MAO: 09:46</p> <p>21 Q. Got it. 09:46</p> <p>22 Looking at the same Exhibit No. 4, would you 09:46</p> <p>23 mind going to Exhibit -- sorry -- page -- on .pdf, it 09:46</p> <p>24 would be page 21. Bottom right, it would be 34. It 09:46</p> <p>25 would be "Online Collection (ID Links)." 09:46</p> <p style="text-align: right;">Page 36</p>
<p>1 order to retrieve the links or mappings between PPIDs 09:44</p> <p>2 and Biscottis IDs? 09:44</p> <p>3 MR. ANSORGE: Objection. Form. 09:44</p> <p>4 THE WITNESS: I do not recall myself using 09:44</p> <p>5 that tool before so I'm not able to answer that 09:44</p> <p>6 question. 09:44</p> <p>7 BY MR. MAO: 09:44</p> <p>8 Q. Got it. 09:44</p> <p>9 And if it has moved to [REDACTED], is there a tool 09:44</p> <p>10 that you would be able to use to search that table for 09:44</p> <p>11 the mappings or linkings between PPIDs and Biscottis 09:44</p> <p>12 IDs? 09:44</p> <p>13 A. I do not have that knowledge. 09:44</p> <p>14 Q. Have you used any tools in [REDACTED] in order to 09:44</p> <p>15 search the tables there yet? 09:44</p> <p>16 A. No. 09:44</p> <p>17 Q. Makes sense. 09:44</p> <p>18 Is there any documentation on how one would go 09:44</p> <p>19 about searching that table either in [REDACTED] or [REDACTED]? 09:44</p> <p>20 MR. ANSORGE: Objection. Vague. 09:44</p> <p>21 THE WITNESS: I have not seen such a document. 09:45</p> <p>22 I do not know if it exists or not. 09:45</p> <p>23 BY MR. MAO: 09:45</p> <p>24 Q. Is there any documentation -- sorry. Strike 09:45</p> <p>25 that. 09:45</p> <p style="text-align: right;">Page 35</p>	<p>1 A. Page 21. Page 21. 09:46</p> <p>2 Q. Should look like this. 09:46</p> <p>3 A. Yes, I have it. 09:46</p> <p>4 Q. If you don't mind looking from this, all the 09:46</p> <p>5 way through the example of ID data propagation examples 09:46</p> <p>6 which on the bottom it would be 27 and dash 40. This 09:46</p> <p>7 slide. I'll give you some time to look at it. 09:46</p> <p>8 A. Can I confirm if you like me to look at 09:47</p> <p>9 slide -- sorry -- slide 21 and -- 09:47</p> <p>10 Q. Oh, no. Slide 21 through 27. Slide 21 09:47</p> <p>11 through 27. 09:47</p> <p>12 A. 21 through 27. 09:47</p> <p>13 Q. Yes. 09:47</p> <p>14 A. Okay. I will take a few moments to quickly 09:47</p> <p>15 reread through these slides. 09:47</p> <p>16 Q. Yeah. Please do. 09:47</p> <p>17 A. Okay. 09:48</p> <p>18 Q. Great. Thank you, Mr. Liao. 09:48</p> <p>19 So my question to you is in your words would 09:48</p> <p>20 you be able to explain to me in Google speak what is the 09:48</p> <p>21 difference between mapping, linking, and propagating 09:48</p> <p>22 data? 09:48</p> <p>23 It's not a test. I'm just trying to 09:49</p> <p>24 understand like how would you explain to somebody, you 09:49</p> <p>25 know, less fluent in the language the difference between 09:49</p> <p style="text-align: right;">Page 37</p>